

In other words, the user holds the outside of the lens and adjusts the focus by turning the screw tap 6a. Unfortunately, the method of the related art proved to be disadvantageous and uncomfortable in many ways because the 5 user had to shift the lens 7 near or far from the image sensor 1 by watching the picture directly, and precision thereof was not that satisfactory despite of much efforts made by the user.

10 **SUMMARY OF THE INVENTION**

It is, therefore, an object of the present invention to provide an image module having an automatic focus adjuster in accordance with chip on board (COB) system for miniaturization and integration in order to lower power 15 consumption and production cost and improve reliability on a product.

To achieve the object of the present invention, there is provided an image module equipped with an automatic focus adjuster, including an image packaging unit that 20 comprises a sensor for sensing a picture image, a substrate including the sensor, a sensor cover for covering the sensor and the substrate at the outside and a sensor filter for blocking an outer environment and passing light between the sensor cover and the sensor only; a lens blade unit 25 that comprises a lens blade having a lens to transmit the

light at a center and a driving coil on a surface thereof; an elastic means for supplying the current to the driving coil of the lens blade; and a magnet for forming a magnetic field to help the lens blade to shift up and down 5 due an electromagnetic force.

BRIEF DESCRIPTION OF THE DRAWINGS

The above objects, features and advantages of the present invention will become more apparent from the 10 following detailed description when taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a systematic view showing a focus adjuster of a lens according to an embodiment of a related art;

Fig. 2 is a prospective view showing an image module 15 having a function of automatic focus adjustment according to a preferred embodiment of the present invention;

Fig. 3 is a cross sectional view of an image module shown in Fig. 2;

Fig. 4 is a cross sectional view of another preferred 20 embodiment of the present invention; and

Fig. 5 is a cross sectional view of Fig. 4.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of the present invention will 25 now be described with reference to the accompanying

drawings. In the following description, same drawing reference numerals are used for the same elements even in different drawings. The matters defined in the description such as a detailed construction and elements of a circuit 5 are nothing but the ones provided to assist in a comprehensive understanding of the invention. Thus, it is apparent that the present invention can be carried out without those defined matters. Also, well-known functions or constructions are not described in detail since they 10 would obscure the invention in unnecessary detail.

The present invention is explained in more detail with reference with figure illustrating a PC camera.

Fig. 2 is a prospective view of the image module equipped with the automatic focus adjuster according to the 15 present invention; and Fig. 3 is a cross sectional view of the image module illustrated in Fig. 2.

As shown in Fig. 3, the image module with the automatic focus adjuster of the present invention can be divided largely into the image packaging unit and the lens 20 blade unit. The image packaging unit includes a sensor 11, a substrate 12, a sensor cover 13 and a sensor filter 14. Here, the sensor 11 detects picture image data. Also, the sensor 11 is positioned on the substrate 12 and formed of chip on board (COB). The sensor cover 13 covers the sensor 25 11 and the substrate 12 from the outside. Lastly, the